NTEGRATING CULTURAL AND CONSERVATION CONTEXTS OF HUNTING : THE CASE OF THE PLATEAU BATEKE SAVANNAS OF GABON

AUTHOR(S):

WALTERS, Gretchen; TOULADJAN, Stevens; MAKOUKA, Loic

CITATION:

WALTERS, Gretchen ...[et al]. NTEGRATING CULTURAL AND CONSERVATION CONTEXTS OF HUNTING : THE CASE OF THE PLATEAU BATEKE SAVANNAS OF GABON. African Study Monographs 2014, 35(2): 99-128

ISSUE DATE:

2014-06

URL:

https://doi.org/10.14989/189519

INTEGRATING CULTURAL AND CONSERVATION CONTEXTS OF HUNTING: THE CASE OF THE PLATEAU BATEKE SAVANNAS OF GABON

Gretchen WALTERS
Department of Anthropology, University College London
Institut de Pharmacopée et Médecines Traditionnelles, Herbier National du Gabon
Stevens TOULADJAN
Wildlife Conservation Society, Franceville, Gabon
Loic MAKOUKA
Amour et Services pour L'Environnement, Boumango, Gabon

ABSTRACT Sustainable hunting is a target of conservation research and action in the Congo Basin. It has been argued that the cultural context must be understood to find solutions. However, the anthropological literature on hunting is separate from the conservation literature on the bushmeat crisis, making it difficult to make links between cultural and subsistence aspects of hunting. Hunting is a cultural subsistence activity in many parts of Central Africa and is linked to wider issues of cosmology, ancestral or nature spirit worship, and land fertility. In many instances, these practices remain despite the modernization of hunting techniques. As such, the place of hunting within the cultural framework is important to hunters with whom conservation organizations work. This study looks at the conservation context and cultural foundations of hunting in the Bateke Plateau landscape of Gabon. Using historical accounts, interviews, and ethnography, we describe the fire drive for the Grimm's duiker (endangered in Gabon), including the physical aspects of setting the fire and organizing the hunting territory, the land chief's role in the fire drive, and the spiritual aspects of hunting including land fertility cults and hunting rituals. Then, the broader conservation context is considered with respect to the Plateau, where illegal hunting is a primary concern and fire management in the national park is a priority.

Key Words: Fire drive (hunting); Bushmeat; Customary chiefs; Hunting rituals; Natural resource management; Central Africa.

> L'identité Teke, elle, se fonde dans une technique politique d'appropriation de la terre. Dupré & Pinçon, 1997: 184

> [The fire drive], c'est pour les Bateke le meilleur moment de l'année. Sautter, 1960: 28

INTRODUCTION

Sustainable hunting practices are a major conservation priority in the Congo Basin (Commission des Forêts d'Afrique Centrale [COMIFAC], 2005), with the bushmeat crisis constituting one of the highest priorities for policy makers, researchers, and practitioners (Wilkie & Carpenter, 1999; Food and Agricultural Organisa-

tion [FAO], 2011). This crisis has both research and conservation action components in Central Africa. When researching this crisis, many authors have focused on markets (Trefon, 2003; East, et al., 2005; Edderai & Dame, 2006; Allebone-Webb et al., 2012), sustainability (Eves & Ruggiero, 2000; Fa, 2000; Hart, 2000; Lahm, 2001; Carpeneto, et al., 2007; Kümpel, et al., 2010a; van Vleit, et al., 2010), economics (de Merode, et al., 2004; Wilkie, et al., 2005; 2006; Coad, et al., 2010; Kümpel, et al., 2010b), hunting behavior (Marks, 1977; 1979; Kümpel, et al., 2009; Coad, et al., 2013), and technology (Wilkie & Curran, 1991; Kümpel, et al., 2008). Most of this work has aimed at understanding present-day dynamics and providing solutions for a threatened fauna. However, Bennett and Robinson observed, "The distinctions between subsistence and commercial, between traditional and modern, between sport and necessity are often fuzzy at best. Any case study of hunting, therefore, is challenged to specify carefully the socioeconomic context of the activity" (Bennett & Robinson, 2000: 1). Only rarely do biological researchers touch upon the cultural and historical contexts of bushmeat studies (but see Koch, 1968; Marks, 1984; Almquist, 2001; Russell, et al., 2011). In the parallel literature on hunting in Central Africa, anthropologists write about cultural aspects of hunting (Turner, 1967; Roulon-Doko, 1998); indeed, there is an additional literature on Pygmy hunting practices and hunting culture (Demesse, 1978; Ichikawa, 1983; Bahuchet, 1985; Lewis, 2002; Lee & Daly, 2004). Finally, there are historical accounts of hunting (Dybowski, 1893; Vassal, 1923; Augias, 1928; Dheur, 1938; 1939; Ramecourt, 1930; Weite, 1954; Rich, 2010), but these are rarely linked to the conservation or anthropological literature. The lack of links among these disciplines may be because the conservation literature categorizes that body of work broadly under "bushmeat," while anthropologists and historians classify theirs under "hunting." However, these links are necessary, as the biological and social issues of hunting are interrelated; sustainability cannot be understood and action should not be planned in the absence of knowledge of the cultural and historical contexts of hunting.

Conservation action in the context of the bushmeat crisis is largely concerned with enforcement, environmental education, work with timber companies, and community involvement (Fimbel, et al., 2000), including alternative livelihood projects to dissuade people from unsustainable hunting practices (Wicander, 2012). Much work is carried out by nongovernmental organizations (NGOs). A recent analysis on the success of conservation projects indicated, not surprisingly, that understanding the cultural context is paramount to project success (Waylen, et al., 2010). It would seem that understanding previous and current aspects of hunting practices is of fundamental importance for the success of conservation projects working with local people to reduce hunting pressures. Conservation research and action and anthropological disciplines could benefit from a collective understanding of how and why people hunt, the historical and current trends in off-take, the geographical scale and territorial organization of hunting, how hunting decisions were and are made, and hunting cosmology. An understanding of hunters' perceptions of wildlife issues is a particularly important link.

This article uses the conservation context of hunting in the Plateau Bateke and nearby national park as a lens for analyzing the Bateke fire drive. Although the

fire drive itself has not been practiced in some 40 years in Gabon, and despite the usage of modernized hunting practices (e.g., modern guns, night hunting with projector lights), hunters and their lineages still claim their customary rights, hunt in their territories using modified fire-setting methods, and continue to perform land fertility rituals to enhance hunting and agricultural performance (Walters, et al., 2011). Passive fires are now lit by both commercial and subsistence hunters to create pasture. Despite the fact that the fire drive does not have a direct impact on wildlife today, the practices associated with it and the current hunting and burning methods, particularly by commercial hunters, certainly do have impacts. Commercial hunters in the area target the same species as local people do, with the former being largely responsible for depleting animal populations. Conservationists working in the area need to understand this context, as many activities in and around the nearby national park focus on reducing hunting pressure. Without such knowledge, it is easy to confuse commercial and subsistence hunting, underestimate territorial claims, and disregard local understandings of wildlife abundance and local people's role in protecting it.

Using a monographic approach, we describe the conservation context wherein over-hunting is a priority for conservation action and then describe historic hunting practices in the area including, physical aspects (hunting frequency and extent) as well as cultural aspects such as hunting organizations and land fertility practices. This information then provides conservation projects with background on how the Teke-Alima people once hunted and how these practices survive today and may influence local understanding of conservation concepts.

STUDY SITE

The study site was located on the border of Gabon and the Republic of Congo on the Bateke Plateau, a vast savanna area on the Kalahari sands, which stretches across the Democratic Republic of Congo, the Republic of Congo, and Gabon in a series of sandy hills (Fig. 1). This work stems from field work in Djouya Canton in Ekouyi-Mbouma, Kebiri, Lewu, Saaye, Franceville, Leconi, Malundu I, and Walla (Boumango) in the Haut Ogooué Province of Gabon, areas that contain hunters who previously customarily hunted in the nearby Plateaux Bateke National Park (Park National Plateaux Bateke; PNPB). Participant observations, interviews, surveys, mapping, and a historic literature review were conducted between 2005 and 2010 by the first author, with additional contact in Libreville and over the phone from 2011 to present. The second and third authors are native to the study area.

CONSERVATION CONTEXT OF HUNTING ON THE BATEKE PLATEAU

Gabon's present-day forestry code forbids hunting without a permit, in closed season, in protected areas, from a car or plane, at night (with or without lights), and with nets, fire or pits, and metal cable traps (République Gabonaise, 2001).

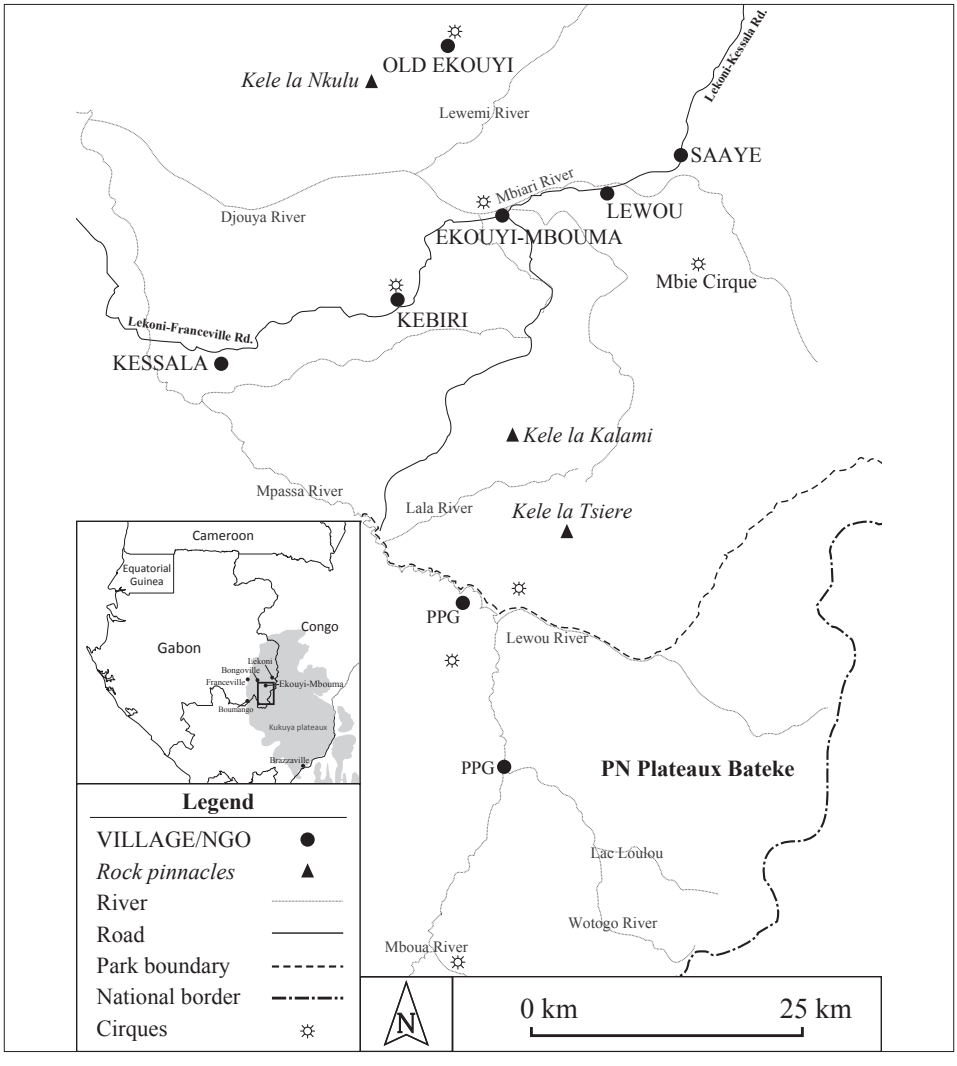

Fig. 1. The Bateke Plateaux geographical area. In the inset, the study area, indicated by a square, is located within a gray area delineating the Kalahari Sands and wider Plateaux Bateke.

In 1994, a decree protecting threatened species in Gabon came into play and included nationally endangered species such as Grimm's Duiker (République Gabonaise, 1994), the main target of the Bateke fire drive. State laws are rarely enforced, leaving hunting on the plateau area in an almost lawless state.

The PNPB was established by decree in 2002 on the border with the Republic of Congo. Conservation partners have been active in the area since the late 1990s. However, the Teke-Alima people have been living in this area since the 1840s and have been migrating throughout the broader Bateke Plateau since at least the

1100s (Battell, 1901; Dapper, 1989 (1688); Soret, 1973; Vansina, 1990).

Present day conservation policies differ on each side of the border. In Gabon, PNPB has several conservation and management goals, including preserving the forest–savanna mosaic and its associated cultural heritage, including that related to fire setting (Agence Nationale des Parcs Nationaux [ANPN], 2013). This park is still in its early phases of development but has the long-term support of the *Project Protection des Gorilles*-Gabon (PPG), a resident project oriented towards gorilla reintroduction but also committed to supporting anti-poaching patrols in the park. Other partners include the Wildlife Conservation Society (WCS), whose representatives have worked on community-based natural resource management and environmental education. The PNPB has been proposed as a potential world heritage site (White & vande Weghe, 2008). In Congo, there is a proposition for a cross-border park contiguous with PNPB. The Lefini Reserve, one of the oldest in Africa, is in the south-central plateaus toward Brazzaville. The Lefini Rapids are located on the Reserve's northern border, but outside the park, and are the location of the *Nkwe Mbali*, a sacred site still important to the Teke people. This area is overhunted by non-residents, and discussion of trying to modify the park boundaries to include this sacred site is ongoing. PPG-Congo and WCS-Congo are the primary partners in this site.

Commercialized illegal hunting of bushmeat is the largest problem for the PNPB (ANPN, 2013), and it is noted as such in developing priority matrices for the PNPB by the ANPN. In studies on wildlife in the PNPB, pressures on wildlife, low population densities, and intense hunting pressures are regularly noted (Bout, 2006). Gabonese hunters use cars, whereas the Congolese enter on foot and use war arms (Gami, 2003). Interviews with participants, observations of historical animal densities in the area, and references to literature from the 1880s indicate that the wildlife is in decline (Walters, 2010a). Consumption of bushmeat at the nearest urban market (Wilkie, et al., 2005) and in the restaurants is relatively high (Schenk, et al., 2006). However, the market for the *ntsa* (Grimm's duiker, or *Sylvicapra grimmia*) is relatively unstudied, and it is thought to be largely a black market item, often sold directly to Teke-Alima elites in Libreville (S. Touladjan, personal observation). Illegal night hunting by urban hunters was regularly noted during the study and was condemned by local people.

Studies by the WCS on both sides of the border show the importance of bushmeat to the local people while also considering the commercial nature of the business (Okoundzi, 2004; Ikamba, 2005; Ampolo, 2007). Messages against commercialized hunting are clear in environmental education initiatives decrying hunting and the use of fire (Ikamba, 2006), and projects to establish community resource management areas are being developed (Nse Esseng, 2009).

Like many parks in Gabon (Cinnamon, 2010), the PNPB landscape was long inhabited by humans. Old village forests dot the landscape in the park; many of these villages were relocated to roadsides during Gabon's regroupement phase in the 1960s; aerial photos of the area confirm villages along the Mpassa River in 1954 (Institut Géographique National, 1954), with some of these now located well outside the park, near Bongoville. Post regroupement and even as recently as the 1990s, although less frequently since the park was established in 2002, Teke-Alima

returned to their ancestral savannas to fish, hunt, and gather. Some of the savannas in which current park projects are located are still considered symbolically under the control of present day Teke-Alima land chiefs who live outside the park. This sentiment is shared by villagers in adjacent Congo, who claim ancestral hunting and fishing rights up to Lac Loulou, a site within PNPB (Gami, 2003) and talk of days when the Gabonese and Congolese met within these areas to exchange goods. The local Teke-Alima around PNPB talk about this landscape's history by citing names of villages, old trails, weekly markets, old hunting savannas, and places where liana bridges once crossed the Mpassa. The Teke-Alima still remember what it was like to live in what is now the PNPB, although there are no villages there today.

The Teke-Alima historically set fires primarily to hunt the *ntsa* both in and outside the area that is now the PNPB. Although many other animals were caught in the process as "by-catch," the *ntsa* was the target species. This animal is now fully protected under Gabonese law (République Gabonaise, 1994); however, the law is rarely enforced. This species is a conservation focus of PNPB. Clearly, the *ntsa* is not abundant throughout the PNPB (Bout, 2006), despite informants indicating that it was often possible to see groups of *ntsa* from villages only a few decades ago. However, the *ntsa* is culturally important to the Bateke people, with *ntsa* meat and horns holding a place within the wider Teke culture and their meat often being the meat of choice for ceremonies. The horns serve as simple tools but also as whistles for driving the rain away or making music. In the past, *ntsa* was often part of the bride price (Vansina, 1973). However, perhaps most importantly for the conservation context, the *ntsa* was the almost singular focus of the Teke fire drive, which was common until the end of the 1960s, and it remains one of the most hunted animals on the Plateau.

CULTURAL CONTEXT OF HUNTING

Africa is the "continent of fire," with customary fires being lit regularly in the majority of the savannas (Komarek, 1972). Such fires have occurred on the Bateke Plateau since at least 2,100 B.P. (Schwartz, 1988). The Teke-Alima migrated into their present day area of Gabon in the 1840s, having been pushed westward by the Mboshi; the Teke-Alima themselves displaced the Ndumu, who were then in the Lékoni area on the Lower Mpassa River (Deschamps, 1962). These groups conducted nearly annual communal hunting fires during the height of the dry season. This practice stopped in the late 1960s after Gabon became independent from France due to a combination of introduced laws, the rural exodus, and the introduction of gun technology, which changed the political ecology of the landscape, removing power from the customary land chiefs (Walters, 2010a). Although some practices survive today, particularly rituals associated with land fertility cults (Walters, et al., 2011), the fire drive itself is extinct, and people burn savannas as individuals rather than communally for both hunting and gathering.

I. Perceptions of Teke-Alima fire by European explorers

Early explorers of the Bateke Plateau area in the 1880s were struck by the many uses of fire in the landscape. In de Brazza's dry-season crossing of the plateaus between Franceville and Brazzaville in 1880, crossing the study site near the Mpassa and Lewou Rivers, he repeatedly noted observations of fire use in his *carnet de route* (Brunschwig, 1972). His descriptions discuss the link to the ecosystem; de Brazza also noted the sheer beauty and his amazement at large fires. Nearly all of his observations were those of an outsider who did not speak the language, and they remain applicable today.

On August 13, 1880, he wrote:

> We are walking through the grass that the chief is burning. Is this a signal? Is it to clear the path? What does the chief have in mind?
>
> Brunschwig, 1972: 38

Two days later, when de Brazza was on a several-day walk with Chief Ngampo, de Brazza talked of the show that a fire made, praising the sounds and sights of the flames:

> The chief rests in a small patch of 80 m in diameter woods in the middle of the tall grass. The chief has burned all the grass behind us to clear the path for our return. While we are taking a rest and eating, the chief sends people to burn the grass. The son of the chief has lit all the grass around the woods on fire and it is a beautiful show all around as the flames are 5 m in height. It is a terrible noise, the sound of the bursting nodes of the grasses, grass that is almost as tall as reeds. Brunschwig, 1972: 40

In contrast, a colleague of de Brazza, Guiral, described the dry season fire drive in a negative light:

> The Bateke also have less noble means of hunting. Towards the month of September, when the prairies are dried by the sun, they burn all the grass, letting the wind carry the flames forward. In a small space, they install their nets, supported every so often by stakes in the earth. A group of small rodents who live in the prairies, flushed out by the fire, find themselves in the area of the nets and are massacred without pity. Guiral, 1889: 154

Through these quotes, it becomes clear that de Brazza and Guiral were viewing Teke-Alima burning through multiple lenses. They saw how it was used, and noted its links with ecology; however, there was some misunderstanding of the purpose and effect of the fires: they did not understand how the fire was managed, what its purpose was, or the wider cultural context of Bateke burning practices.

II. The decentralized northwestern Teke system: Bateke outside the authority of the *Onkoo*

Unlike the centralized political system of eastern Teke, united under the authority of the *Onkoo*[1], the supreme land chief who signed his territories over to the French in 1880 to create French Equatorial Africa, northwestern Teke was decentralized and did not recognize the *Onkoo* as a major authority (Deschamps, 1962). The northwestern Teke used the *nkani* system of chiefdoms, which was based on an initiation group that ruled small associations of village communities (Ebouli, 2001). These communities were organized based on domains or *ntse*. Each domain had a chief, as indicated on early explorer maps from expeditions to the Bateke Plateau in the late 1800s. On one map, showing the rivers Alima and Ogooué between which the Teke-Alima live (then and now), numerous domains are noted by each land chiefs' name (Pobeguin, 1888). These domains refer to the territory over which the land chief, or *ngantse*, presided (*Ngáantsii* (Vansina, 1973), *Ngan-scie* (Sims, 1888), and *Nn'ga-ntché* (de Brazza, 1887). The land chief was the person in charge of a particular domain and responsible for protecting the area from witchcraft, authorizing hunting and burning, settling disputes, and collecting tribute. According to Vansina, "The authority of the squire [land chief] derived from the "unbreakable mystical bond" which had always existed between the squire and the *nkira* [land spirit] of the domain" (Vansina, 1973).

This system, which was quite decentralized, was perceived by some outsiders as evidence that the northwestern Teke lacked unity as an ethnic group, with chiefs really only having power over their own domains (Badier, 1929). However, the inhabitants within a domain were perceived to be tightly knit, as expressed in de Brazza's observations.

> The habitations are dispersed; the deep ravine or water course is the barrier between neighbors. It is at these natural barriers of the district that the Bateke defend their plantations and their village. From there, its inhabitants are dependent upon a chief, unifying the inhabitants of the same *ntche*.
>
> de Brazza, 1887: 56

De Brazza also reported that there were often disputes between domains and gave example of the people of N'jayole's Domain who did not venture onto the domain on the right bank of the Lékoni River (de Brazza, 1888).

While the northwestern Teke were not unified under a single ruler, they were unified under their land chiefs. According to Ebouli's work, there was a hierarchy of rule. The basis of the rule was the localized lineage (*ndzo*). Several lineages were grouped into a village, or *pugu*. These villages were then grouped into a domain. These domains were ultimately grouped into a country, or *kasi* (Ebouli, 2001). There was a chief at each level of the hierarchy. However, in this study, I will consider only the land chief, who ruled over a domain, and the supreme land chief, who ruled over a *kasi*.

III. Hierarchy of rule and organization of domains

The land chief ruled his domain but was also ruled by a supreme land chief. According to archival documents in the late 19th century, the current villages and expanse of the modern-day Djouya Canton correspond almost exactly to the lands once ruled by a supreme land chief. Ebouli noted that at the end of the 19th century, there were three *kasi* occupied by the Teke-Alima in Gabon:

> *Kasi* M'Bongo, including Bongoville-Lékoni, comprising six domains and 41 villages *Kasi* Kakogo, including Akou-Kessala-Mbouma-Saaye, comprising three domains, 16 villages *Kasi* Piti toward Akieni, comprising six domains and 38 villages. Ebouli, 2001

Kakogo, the last supreme land chief of the study site, ruled over three domains, and associated villages including:

> Domain Akou: villages Akou (Opana) and Leba Domain Kessala: villages Kessala, Mbie, Kalami, Keouaga, Kiga, Lehou, Eouono, M'boua, Ossuona Domain Bouma-Saaye: villages Saaye, Bouma, Ekouyi, Ossele, Tchoulou. Ebouli, 2001

VI. The *oulwa* and the number of domains

The overriding symbol of the land chief political system was the *oulwa*, a metal torc worn by the supreme land chief. This ornament figures in de Brazza's photos of the *Onkoo* at Mbé and can be seen in private collections (Dupré & Féau, 1998, pers. obs. G. Walters). The original *oulwa* were made by the *Onkoo*'s blacksmith. Each tooth represented a domain under the control of the wearer of the torc. Thus, the *Onkoo* wore a 12-pointed *oulwa* representing the 12 domains under his command on the Plateau Mbé. In the Koukouya Plateau, Bonnafé reports 10 domains (Bonnafé, 1988). In the Ekouyi-Mbouma study area, there are more than 10. However, the *oulwa* had only been seen by those of previous generations, with stories passing down to today's elders.(2)

The other symbols of power of a land chief included circles painted around their eyes to see the "other world," an anvil, a buffalo-tail flywhisk, a long pipe, bracelets of elephant hair, caps with feathers, and blue beads (Vansina, 1973). One can add to this list wigs of fiber with goat horns, cowry shells, and porcelain beads (Cabrol, n.d.), with de Brazza noting that the raphia wig with horns served as a symbol of the land chief's office (de Brazza, 1887). A crown was a significant part of the land chief dress (Kinata, 2001). All of these symbols appear to be part of various powerful cults present at the time.(3) A picture of the Koukouya sky chiefs includes the leopard raphia (woven raphia with multiple colors and textures), a leopard cap, a long pipe, and a ceremonial knife carried on the shoulder (Bonnafé, 1978). The land chief also had a domain fetish, which Cabrol (n.d.) called the "father of the domain," or *tara mantsie*, that facilitated the communication between the living and the dead.

V. Land chiefs and land fertility

1. Connection with land spirits and ancestors: fecundity and fire

The land chief system was a magico-political one involving a balance between the spiritual powers of the domain spirits (and ancestors) and the physical well-being of the constituent villages. There was a tight link between spiritual and physical order, which then impacted the productivity of the domain in terms of sufficient food supply secured through hunting, gathering, and cultivation. This link between spirits and the physical landscapes made the domain a "…geographical, cultivation, cultural, and cult space" (Ebouli, 2001). Among the northwestern Teke, the land chief played the economic role of guaranteeing the fertility of the domain, "being charged with the application and the enforcement of respect for the rules of managing the domain" (Ebouli, 2001). This included guaranteeing agricultural fertility as well as success in hunting, gathering and fishing expeditions.

VI. The mystical Bateke landscape

Hunting and its relationship to land fertility in the Bateke Plateau constituted only part of a landscape, where other cultural practices and beliefs were at work. If one sits and listens to stories of the lives of the recently deceased, one learns that there were magical powers to be reckoned with in the landscape: it is, for the Teke, a land of miracles. Waters, certain forests, certain animals, and sandy cirques are linked with ancestral spirits. Biebuyck (1963) indicated that the sacred aspect of lands can be catalogued quite generally to include initiation ceremony sites, cemeteries, haunted woods, primordial emergence sites, and old village locales in many parts of Africa. This is true of the Bateke landscape where the fire drive once operated.

In the Ekouyi-Mbouma area, each domain has its sacred place where ceremonies are conducted or where spirits or ancestors reside. Each domain has a sacred object that mediates between the living and the ancestors and spirits. In the case of the Kankuru Domain, it is *Njua Mba*, which is kept in the Kankuru *olebe*, the temple-like structure where domain rituals take place. In the case of Kankuru, the sacred wood is called Kasswele, the purported dual source of two rivers: a lake in the forest with high waters during the dry season and low in the wet season. Non-clan members are forbidden. The lake itself is inhabited by Kankuru ancestors, so the water removed for ceremonies is sacred water.

In addition to sacred woods, the sandy cirques and some lakes (which contained underwater villages) are sacred. Some people were believed to have the capacity to visit these villages by transforming themselves into crocodiles or by ingesting some of the beach sand, speaking to the waters, and blowing kola onto the water's surface, which induces the inhabitants to rise to the surface. If one were to swim in these waters, one could eat the stem of *Costus dewevrei* to transform oneself into a crocodile. The Teke in Brazzaville were known to be "friends of crocodiles and hippos" and duly feared (Sautter, 1966). By one account, the crocodile housed

the spirits of former chiefs who transfigured themselves to kill their enemies (Dusseljé, 1910).

Other spirits, or *opfu*, in the landscape included the *obwan*, which were treated here as mystical fires that were to be feared. There are three types of *obwan*: savanna, forest, and water, listed in increasing order of danger. Some informants who have seen the savanna *obwan* indicate that it is a noisy fire that rapidly changes color, shape, and location. It comes with the intention of doing harm and may be sent by someone to do so. When land chief Kanini recounted his experience with the water *obwan*, he said that he had been at the Lewemi River with his younger brother when the *obwan* appeared. He was able to ward it off with words but fell ill upon returning to the village (former Mboua village site). His father, Apaya, was obliged to heal him (interview, Kanini, Malundu I, Boumango, July 2, 2008).

Rocky outcrops are also important mystical places. These are sandstone outcrops in the Kalahari sands that were rare at the study site (but more common on the plateaus in the adjacent Republic of Congo). There are three such outcrops in the study area: *Kele la Kalami* (Kimi Domain), *Kele la Tsiere* (Nkomo Domain), and *Kele la Nkulu* (Ekouyi Domain). The most powerful one in the area is the highest, *Kele* la Kalami, named for the nearby former village site of Kalami. *Kele* is seen as a protection site for the people. In the words of an elder, Onkadi, "*Kele* is like the guardian of the domain" (interview, Onkadi, Franceville, July 27, 2008). On one visit, Etienne Nturi asked for an offering of red wine. This was poured on the ground, quenching the thirst of the ancestors. I have been warned not to remove any pieces of the rock outcropping from the site. The people were afraid that someone might sell portions of the stone, and if discovered, the act would end in the death of the offender. Pieces of this rock had once been used by Supreme Land Chief Okoundzi to heal sickness.

Such cirques, copses, lakes, and rock outcrops were and still are the key landmarks of the countryside. Spirits that the land chiefs feared were present in this landscape. It was in this cultural landscape that the Teke land chief ensured land fertility, in part, through the fire drive and in part through rituals.

VII. Domain rituals

There are several ways in which rituals were and are used to ask blessings for or to resolve problems of ecological balance in the domains. These rituals may be conducted in a preventative way to avoid later problems in the domain or may be conducted as a way to solve problems of domain fertility.

1. *Ambwongo*: offering ceremony

This ceremony was formerly conducted just before the communal hunt to "work out the domain demons." This ceremony is also performed in the case of specific problems in the domain, and it involves an offering for a transgression against the domain. Alternatively, it can be a preventative offering to request a blessing for the fire drive or for another specific undertaking.[4] This ceremony is performed

by the land chief in concert with initiates of the *Ngo* cult (leopard cult). It may only be attended by initiates, as it was performed in the *olebe* of Kankuru Domain. The ceremony is conducted in the presence of *Njua Mba*.[5] It is the adoration of this fetish that maintains balance within the domain ecosystem. Regular lighting of the *olebe* fire by village members of the *Ngo* cult occurs every few months. This *olebe* had been dismantled and rebuilt in the current Mbouma site when the village last moved in the 1960s. If this had not been done, then the hunt might not be successful. The domain fetish in Vagha Domain is described as a bell, something that each domain possesses[6]; as the present-day land chief of Vagha Domain, Pierre, Anza described it, this is his mpu or power that enables him to protect the domain. He gave the example of his response in case a lion was ravaging the domain. He would take his bell and go to the Ntchoulou River with offerings of kola nut, tobacco, salt, and oil. He would cry out to the ancestors for protection. He would then repeat this action in the cirque behind the village. Thus, safety for the people of the domain would be ensured (Interview, P. Anza, Kebiri, August 20, 2008).

2. *Okoo*: domain ceremony in the old village site

This ceremony is a blessing ritual that is preventative and is conducted to avoid catastrophe, poor harvests, and unsuccessful hunts. It can be performed before travelling or as a means to ask for good performance at school, but it is rarely curative. It most often involves three circles of people: the land chief, those close to the land chief, and foreigners (including both slaves and rich people).

According to Nturi, *Okoo* was often preceded by *Ambwongo*. During *Ambwongo*, villagers would be called together to talk to the ancestors. Offerings of kola, tobacco, and wine would be made in the *olebe*. *Okoo* would then take place at the cemetery of the former village site of Mbouma. There, the villagers would clean the cemetery and leave offerings of food and a chicken (interview, Nturi, Ekouyi-Mbouma, August 20, 2008).[7] Informants did not remember this having happened for several years.

In addition to this type of *Okoo*, others have talked about a regular pre-cultivation ceremony that occurred to ask a blessing on the agricultural efforts in the domain. Normally, at every agricultural season, one would ritually plant a symbolic, large *ekala*, a single-row savanna plantation with representative plants of each crop. A ceremony would be conducted wherein the land chief would sprinkle water from Kasswele on the ritual plantation, normally situated in the old village site of Mbouma. According to Etienne Nturi, in drawing the water at Kasswele, the gatherer would speak to the water, identifying himself by his family and clan. He would explain the purpose of gathering the water and then invite the ancestors present in the water to attend *Okoo* (interview, Nturi, Ekouyi-Mbouma, Gabon, September 27, 2007). Thus, the ancestors being poured on the ritual plantation were seen as a benediction on the agricultural production of the domain. This occurred only once during the study period, in late 2010.

However, Mbouma, the principal village today in Kankuru Domain, is part of a regroupement of two villages, the other being Ekouyi, a related group to the

Teke-Alima (the Teke-Kaningui) of forest origins and therefore more closely linked to rites of forest peoples (such as *Njobi*). The people of Ekouyi regularly organized an *Okoo Njobi* plantation blessing ceremony. This ceremony occurred twice during the research period at the study site, and there were plans to conduct another one between the first rains and the last planting, sometime in October or November 2008. In 2007 (but not in 2006), the village chief of Mbouma, who was also the guardian of Kankuru, attended these dances. Normally an antelope was hunted for this event and played a part in the private portion of the ceremony. The public ceremony was held in the *Njobi olebe* in Ekouyi, and on the following day, the private ceremony, attended only by initiates, was held in a sacred place in the forest. Thus, while the forest Teke of Ekouyi attended their plantation ceremonies via the rite of *Njobi*, the savanna Teke of Mbouma had seemingly neglected their *Okoo* ceremony. These practices form the context in which the Teke land chiefs organized their annual fire drives.

VIII. How the eastern Teke groups burned their savannas

Sautter noted that while net hunting in the forest was a very common practice from Franceville to Zanaga and Sibiti and all the way to Ewo and Mbé, the fire drive was unique in Central Africa (though common elsewhere in Africa):

> The fire drive in the savanna is unusual. One only finds this in middle Congo, practised by the Bacougni of the Niari. On the Plateau, it barely happens except south of Mbé, in a region where the intact traditional chiefdoms prevent premature fires. Sautter, 1960: 27

Several ethnographic and explorer accounts discuss the ways in which fire setting was controlled on the plateaus. According to these writings, the land chief had strict control over when and where fires were lit (Sautter, 1960; Vansina, 1966). The largest fires were set during the long dry season from July to September as part of the communal fire drive hunts (Guiral, 1889; Papy, 1949; Sautter, 1960; Vansina, 1973). Vansina further noted a short fire season in February for hunting Adbim's stork. This seems to imply that most fires were set only once per year (de Chavannes, 1886). Areas were reported to be left as unburned "refugia" to provide protection for animals (Sautter, 1960; Vansina, 1973). Some Teke groups left areas unburned for a period of 2 to 5 years and then rotated the area back into annual burning, whereas others seem to have burned the same areas year after year, without rotation (Sautter, 1960). Sautter was the only person to make notes on fire size and number; he reported an average estimated fire size of 2–4 km^2 during his stay, noting over 200 such fires around four to five villages in the 1960s.

1. Fire distribution in space and time

Vansina's ethnographic study of the Teke-Tio group indicated their disproportional love of hunting. Despite the fact that agricultural and gathering practices

supply a greater portion of the food supply (Vansina, 1973), these practices were neither as esteemed nor as ritualized as hunting. Not even the male activity of trapping merited rituals like hunting. Hunters in the past garbed themselves in raphia skirts and were armed with weapons such as arrows, spears, lances, and flintlock rifles (Papy, 1949). According to Vansina, hunting by spear and net occurred throughout the early wet season from July to January, when the grass was not too high. Trapping occurred in the short dry season in January–February. Fire drives occurred in the dry season from May to September and were a group activity involving men, women, and children.

Some differences in hunting methods were observed between the Teke-Tio and the Teke-Alima. For the Teke-Alima, hunting in the forest–savanna mosaic meant that the communal fire drive occurred during the mid-dry season in July and August. Toward October, when the grass was resprouting from the dry season fires, a second type of net hunting called *antiama* occurred in the plains. From February to March, during the Abdim's stork migration, fires and *aliga* glue (from a species of canopy tree, *Omphalocarpum procerum*) were used to attract and trap birds in the riparian forests and nearby savannas. However, in the forest, hunting was done throughout the year, involving both individual trap lining and communal net hunting for porcupine and later red river hogs, a practice adopted from the Obamba during a time when the Teke plantations were being eaten by bush pigs. The nets and hunting techniques for each of these species were different. Only communal porcupine hunting with nets is still practiced today. However, the most famous form of hunting was the communal dry season fire drive.

The authority over the timing of a fire drive ultimately rested with the land chief. Most of the domain was reserved for the dry season fire drive. However, a land chief could decide not to burn his domain that year. Pierre Anza, explains the thinking like this,

> Ah! This year, no, we are not going to burn Vagha. I refuse.

He then sends the news to the other villages, telling them that the Vagha domain will not be burning their savanna. He continues the story indicating that while the other domains are conducting fire drives,

> I stay at home, resting easy. Vagha will stay like this [unburned] at least for two to three years. When I say, 'No, two years is already a long time, this year, we must burn it,

He then summons the people of neighboring villages to come for the hunt. He continues,

> This year, we are burning Vagha; we kill the animals. Tomorrow or after tomorrow, burn Vagha again, no. When one burns too much, the animals run far away. One must first leave it [unburned], at least two to three years, in order for the animals that have gone towards Congo [approximately 20 km from Anza's Domain] to return. Men that burn time and again, this is not good. Interview, P. Anza, Kebiri, November 19, 2007

IX. The communal fire drive

1. Hunting rituals

Ensuring success in the hunt happened at individual and communal levels. There were pre-hunt communal ceremonies as well as individual efforts to obtain nefarious forms of fetishes. Vansina depicted preparation for the hunt as follows. Hunting prowess was typically increased by charms, amulets, and rituals, often dependent upon collecting and using specific plants. Hunters offered prayers to their *ikwii* (ancestors) and the nature spirits, consulted medicine men, and recited mantras to guarantee a successful hunt (Vansina, 1973). According to informants, a good hunt indicates success in life, the blessing of the ancestors, and harmony with the natural world. A few people who were known to have been good hunters in the recent past were also thought to have been sorcerers, using rituals inappropriately to ensure their success in the hunt. Nturi warned that those who used amulets should be wary of the requirements so as to make the amulet work properly, or it might "eat your family," exacting the blood of relatives. In a more benign method of ensuring hunter success, people would appease the spirits of deceased twins in the family, something that was perceived to be a powerful tool for family protection (interview Nturi, Ekouyi-Mbouma, September 27, 2008). This, as Mbia pointed out, might involve gifts of palm oil to the deceased to avoid their wrath resulting in poor hunting success.

When asked what it meant to have a bad hunting performance, hunter Nturi replied that it might just mean that God did not intend for one to have a good hunt, and it might be time to wait awhile. However, if the problem was pervasive across the domain, then a communal *Okoo* ceremony might be conducted.

According to land chief Kanini, individual problems during the hunt could also arise when there were problems between the hunter and a member of the village. Additionally, one might consult a magician who might suggest hunting in a different part of the landscape (interview, Malundu I, Boumango, July 1, 2008).

2. Preparation of the area to be burned

The area to be burned was designated well before fire season, with packets of grass called *ajigi* attached to shrubs indicating the limit to be burned. *Ebaningi*[8] were sent from village to village proclaiming the limits to be burned and announcing that unauthorized fires were not welcome. Other informants reported burning fire breaks along these limits during the rainy season, toward the month of April. Additional firebreaks were made around areas near the village that would be set aside for gathering grasshoppers.

3. Making and repairing the nets

According to Martin Sia, one of the few remaining owners of a hunting net used in the fire drive, the work of maintaining the nets was time intensive. Nets for hunting various animals were called by different names and had differing con-

struction. The net used in the fire drive was specifically for the *ntsa* and was called the *kia*. Making these nets involved gathering copious quantities of suitable plants including *okoura*, *ofouli*, and *oposso* plants (Interview Sia, Saaye, September 16, 2007).[9] The plant was collected, and the bark was removed and dried. This was then attached to a pole and beaten until it was soft. At this point, the material could be made into cord by rolling the bark against the inner thigh until it began to intertwine with itself. Nets had to be made and repaired by July to ensure that they were ready for the fire drive. Making nets was not a specialty; every hunter knew how, and they were made communally.

4. Pre-hunt ritual

The *olobo* ritual was performed prior to the hunt. *Olobo* is a hunting song and ritual that requests protection from ancestors, safety during the hunt, and success in hunting (Le Bomin, 2004). As Mbia explained, it was at this ceremony that he was selected to be an *otiugui*, or firesetter. The *olobo*, according to *otiugui* Antoine Mbia, was a song that only three of Kankuru Domain still mastered (at the time of this writing, only one remains, as Chief Nturi died September 13, 2008 and another lineage member died in early 2014).[10]

According to the elders of Walla village, the night before the hunt, the organizer of the hunt, the land chief, would talk to the ancestors to request their blessing on the hunt, endowing it with success by providing much quarry and no accidents. Samuel Onkadi said that if the organizer asked for 20 animals, then the hunt would be stopped when the hunt obtained those 20, even if that happened early in the day. In effect, he says, the land chief was the conduit through whom the ancestors were speaking about the hunt (interview, Onkadi, Franceville, July 27, 2008).

According to Sebastian Naliba, different rituals were used for forest hunts than for hunts in the savanna; *issami-issami* was conducted for the forest, whereas *olobo* was conducted for the savanna. Kanini gave several examples of the *issami-issami* dance when we visited him; these songs indicated how the hunt would unfold (recorded dance, Kanini, Malundu I, Boumango, July 1, 2008).

According to Mbia, on the day of the hunt, the land chiefs of all domains involved in the hunt would meet at a designated place. As an example, he said that the villages of Saaye, Allieme, Lewou, and Nkiga would meet at Kougou hunting camp (*ossie*), a copse at the limit of the Nkomo and Kankuru Domains, where the fire for the Nkomo Domain was started. There, at Kougou hunting camp, one would see great dances and a magician for each domain (Deschamps, 1962). Every domain had their land spirit. The goal of these ceremonies was for each domain to deal with its land spirits to ensure a successful hunt. Each land chief brought his own *otiugui* to light the fires for their domain. Around 9 a.m., when the grass was dry, the hunt would commence.

5. The hunt itself

Bonnafé gives details on the Koukouya Plateau hunt, which resembles that of

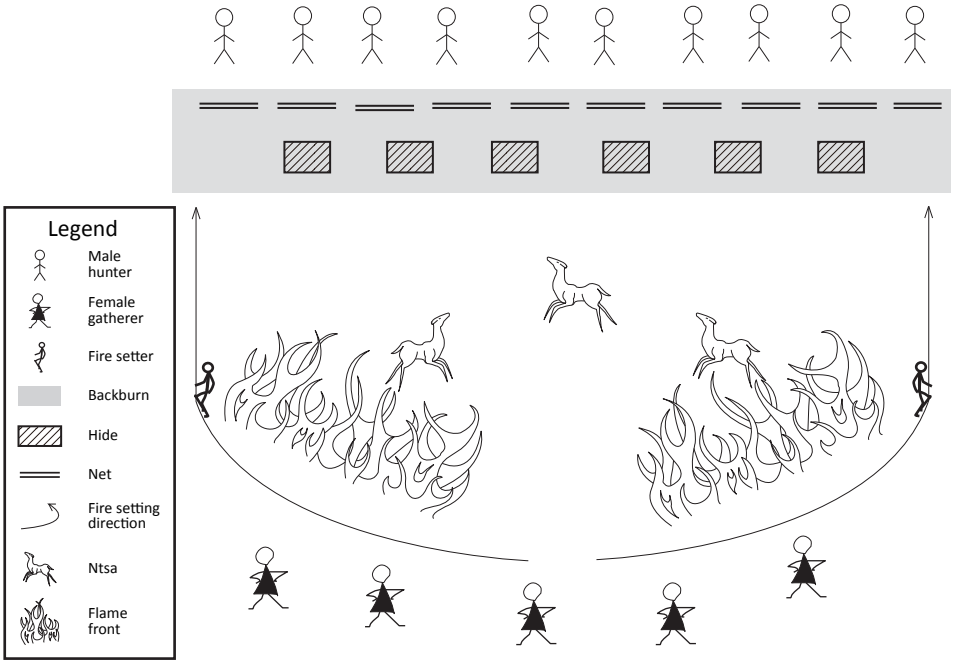

Fig. 2. The Bateke fire drive in one burn unit (*ewa*). Fire was set along a curve towards the nets by the fire-setters. Hunters were waiting inside the hides, in a burned out zone just in front of the nets. Hunters waited outside the nets for the animals to be driven into the nets. Woman followed the flames to collect other animals and insects as by-catch of the hunt.

the Teke-Alima in the study area (Bonnafé, 1987). Here, we draw on informants, complemented at times by Bonnafé's description, to give a detailed account of the former Teke-Alima fire drive once enacted at the study site. This is summarized in Figure 2, a version of a figure often drawn for us by Bateke informants.

Domains were burned in a specific way. Each domain would be burned piece by piece (*ewa)* in the mid-dry season (July or August). The land chief would send out messengers to villages in adjacent areas, informing them of the day of the hunt by means of a string tied with knots, each knot indicating one day until the hunt would start. This would give enough time for the women to prepare manioc for the hunt, the plateau staple whose preparation requires five days. Hunters and their wives would then unite at a given place, normally an established hunting camp. Each hunter would bring a net; given that 40–50 hunters participated, this meant that 40–50 nets would be joined end to end. These nets sometimes extended for kilometers (Dusseljé, 1910). Bonnafé notes that each net in the Koukouya Plateau measured 20–30 × 2 m (Bonnafé, 1987). In one case, the first author measured an *ewa* in Kankuru Domain of 12.9 km in circumference, and able to contain an area of 7.3 km^2. The nets were staked out in a back-burned area called an *obli* to avoid burning the nets. M. Sia indicates that the nets were secured on

top and bottom, using y-shaped *epandi* sticks, secured at the bottom with *ofuli* strings.

Hunters were positioned inside the back burn-area inside leaf-camouflage huts called *katui* made of *ololo* leaves (a savanna shrub, *Annona senegalensis*). Each hunter was positioned in front of his own net. Other hunters were on the outside of the net (beyond the area to be burned), with clubs and spears in hand. Firesetters were instructed to run a lighting relay (one to two runners per half of the fire perimeter) along the edge of the horseshoe-shaped area to be burned, while singing out in a high voice a song that set the cadence of the fire so that it was set at an equal pace along both sides.

The firesetter's flames set a great fire that burned with the direction of the wind or "*mba ya olumi*" ("the husband's fire," in contrast to a backing fire, called "the wife's fire"). Animals that had been hiding in the tall dry grass ran away from the fire and into the nets, chased into the nets by the cry of the camouflaged men hidden in the *katui*. Women walking behind the flames would also cry out to encourage animals not to dash back through the advancing flames. The hunters outside the net would spear the animals or hit them on the head as they arrived in the nets. Women would follow the flames, picking up any small animals that had been killed such as rodents and grasshoppers. Approximately three *ewa* burn units were burned per day, each having known, geographical boundaries. After the hunt, people would gather for a few hours in the evenings for storytelling. Once the burn in a given area of the domain was completed, everyone moved to the next camp, one of the regular hunting camps used every time the domain was burned. At the final camp, the meat from the hunt was divided. In the Nkomo and Kankuru Domains, the camps were used in a particular order, and the final one where meat was divided was always the same. These were forest camps called Mpiini and Kasswele, respectively. The meat was divided into three portions; these were distributed to firesetters, hunters at the nets, and the land chief. Upon returning to the village, this could then be shared with other villagers. According to Kanini, "When one eats alone, your domain is cursed" (interview Kanini, Malundu I, Boumango, July 1, 2008).

Once a domain was burned and the next was due to be burned, the same hunters continued the process. Participants in this hunt included people from all adjacent domains who were called in by the land chief. The people of Lewou estimate that it took about a week to burn Nkomo Domain. Kankuru Domain would take 3 days to burn, burning two to three *ewa* per day. Burning was a dangerous activity for everyone, from the lighters to the hunters. Accidents occurred sufficiently frequently to be recalled regularly in our surveys, even being cited as one of the reasons that this form of hunting was no longer practised.

In our interviews in five villages, most people reported that the last communal hunt in which they participated occurred in the late 1960s.[11]

6. Firesetters, the *otiugui*

Specialists for each domain, called the *otiugui*, were responsible for burning these areas. Essentially, these were some of the best runners in the area, as they

had to run a quarter to half of the perimeter of the area to be burned. People estimate this distance to have been about 2 km through the savanna.[12] According to the elders from Walla village, "We don't give the mission to a weak man; if he is, he will get burned! (Interview, Walla elders, Walla, Boumango, July 25, 2008)"

Jean Paul Andza, a firesetter from Vagha Domain, reported that he was chosen because it was an inherited spirit within his family; his grandfather had been the first in the family to be a firesetter. His spirit was the guinea fowl. Jean Paul was noted by others as having once been able to run as fast as his hunting dogs when hunting guinea fowl. Another known firesetter was the now-deceased Ankwa of Lewou. He had inherited the spirit of the cyclone, ondjigi. He was purportedly the fastest runner in the area at the time (interview, J-P Andza, Lekoni, November 19, 2007).

While some firesetters were chosen for their speed, others were chosen because of their regard for tradition and hierarchy. Antoine Mbia reported that despite his small size, he was chosen for his intelligence. If the runner ran too fast, the burn would not occur at the right pace: he had to run a distance, then stop and look at how the fire was progressing. Also, others could not see the runner from the other side of the burn, so they had to assess runners' progress indirectly. During a pre-hunt ceremony in the *olebe* of the domain, the chiefs had gathered together, including Tolo, the land chief of Kankuru. Chief Tolo had asked Mbia's father's permission for his son to become a firesetter. He was one of two selected for the job, replacing the older firesetters who were now unable to perform the duty. They gave offerings of red wine and sang until early evening. The next day, the hunt began (interviews, Mbia, Mbouma, September 30, 2007, December 31, 2007, May 2, 2008, August 13, 2008; interview, Alna, Lewu, July 9, 2007).

When a firesetter was selected, a certain amount of knowledge was imparted. According to Mbia, he was taught by his father how to burn by dates, indicating that a person who burns an area knows the dates [to burn]. Mbia, one of the most active burners in Mbouma and one who conscientiously burns for gathering and hunting purposes today, says, "grass matures in 9 months, like the pregnancy of a woman." The months were sometimes counted by sticks attached on a string in the *olebe* to help mark that the year was passing. Mbia further indicated that the limits of the burn units were shown to them by their elders. These limits are still known today despite the fire drive having been abandoned.

Additionally, the firesetters seemed to possess a more substantial knowledge of the names of savanna grass species and types. Each grass species has a name, and certain grassland types are known to burn better due to their earlier drying tufts at the base of the plant. To be a firesetter, one had to have been part of the land chief's clan. People generally could name quite a number of these traditional fire setters, but few were still living. As the post was no longer needed, the associated knowledge was also dying. Once, in a discussion among a variety of age groups where Mbia was the eldest, he began talking about the way in which they formerly lit savannas by using a particular grass species, osenegue, to make the *onya*, broom-like bunches of grass used to start fires. People, particularly the middle-aged men, listened with interest, saying they had not known these details

before. Only 40 years ago, it would have been this very age group and younger that would have been the new generation of firesetters.

7. Off-take

For all of the effort required by the hunt, some reports of the fire drive indicated a variable yield. For example, Sautter, in direct observation, counted only 14 animals taken in the eight hunts in which he participated among the eastern Teke in 1960, which he calculated to be half an antelope per km^2 (Sautter, 1960). Dusseljé reported that as many as 40 animals could be taken per day in Teke-Alima territory (Dusseljé, 1910). In an interview, Mbia remembered obtaining perhaps 10 *ntsa* per day in Kankuru Domain; this was for a domain that burned within 3 days. Alna remembered as many as 50 animals being shared out at the end of a hunt on a domain, with Nkomo Domain taking 5 days to burn. Once the meat was shared at the final hunting camp, it would seem that there was not much to share among the 40–50 hunters and their families. The largest portion always went to the land chief. Alna indicated that this was a necessary tribute, as without the land chief, there would have been no savannas reserved for the hunt. Another factor that is not considered here is the collateral off-take of rodents, birds, and grasshoppers, the woman's take from the fires. According to Alna, it was this together with the hunted meat that sustained the families through the immediate post-hunt phase of planting their fields. At that time, food was normally low and the workload high.

8. *Antiama* hunting: rainy season post-fire savanna hunting

A form of savanna net hunting that occurred after the fire drive in August was called the *antiama* hunt and was performed by the hunters in October. Kanini described this as a passive hunt where nets were used to hunt animals grazing in the new pastures created by the fire drive. Alna indicated that hunting in the savanna only occurred in August and October and at no other time of the year.[13]

In the past, when they needed meat during the rest of the year, the Teke hunted in the forests. Today, the more forest-oriented Teke use trap lines. However, the tradition of communal net hunting for porcupine is still practiced by the people of all the villages at the study site.[14]

CURRENT-DAY PRACTICES

Although the fire drive is no longer practiced and therefore has no impact on wildlife, related hunting practices continue. Firing the savanna, by both commercial and subsistence hunters, occurs throughout the year, and the frequent firing changes the structure of the savanna itself (Walters, 2012). This firing is a passive form of hunting where hunters light the savanna to create grazing grounds for game, particularly the *ntsa* (Walters, 2010a). Subsistence hunters still largely hunt in their ancestral hunting grounds outside the PNPB and defend them against

commercial hunters from the city. During the study, one village set nail traps for hunters who arrived at night, driving quickly through their village to access hunting areas. Another village set up self-appointed road controls to monitor bushmeat being transported out of their hunting areas. Local people distinguished between urban and local hunters and were independently taking stands against the former group.

I. Resolving issues with the ancestors when the domain was infertile

Okoo is performed when domain production is low, whether due to a poor harvest of gathered resources or the ravaging of plantations by wild animals. During the research period, villagers complained that their fields were being ravaged by bush pigs, which was creating a manioc famine. Furthermore, caterpillar (*kankele*) and beetle (*nginginga*) gathering had not been productive in recent years. Additionally, Kasswele's waters had become filled with dead plant material, which was interpreted as a sign of domain negligence.

Some people blamed neglect of the sacred woods for the ecological imbalance they experienced in the domain. Others believed that fault lay in neglect of their domain fetish. Yet others blamed the general disregard for domain interdictions or "*ekele ba ntsie*" (Ebouli, 2001).[15]

Fire setter and hunter Mbia thought that it might be best to bring water from another sacred forest called Oyaninga to restore the sacred woods, along with sacrifices of kola and red wine to make amends with the ancestors of Kankuru Domain. This action in concert with *Ambwongo* and *Okoo* rituals might restore domain fertility.

The people of Kankuru were becoming more vocal about the problems in the domain, and the guardians of the domain were due to organize an *Okoo* in late 2008 to address these problems. They finally succeeded in having the ceremony in late 2010.

DISCUSSION

The Teke of Gabon practiced a form of land tenure common in Central Africa savannas. The lands were managed by the land chief, who regulated access to and maintained the fertility of resources. This was a magico-religious system that involved regularly conducted ceremonies and rites. Although these ceremonies continue today, some are becoming rare.

Most informants during the study indicated that their last participation in a fire drive occurred in the late 1960s. This was a tumultuous time in Gabonese history, when villages were being relocated to roadsides, youth were moving to urban centers, and the state became independent from France. Gabon was issuing laws that replaced customary law. It was at this point that the land-chief system seems to have collapsed (Walters, 2010a).

Today, despite most informants' knowing the Teke word for land chief, there are numerous youth who do not know the historic function of this person. Most

land chiefs are now dead, and the remaining ones are elderly. Domain traditions are kept by fewer and fewer people. As Etienne Nturi put it in speaking of Kankuru Domain, "The land chiefs are over; the only ones left are we, the *petit-fils*."

I. Hunting and local participatory approaches in Gabon

Hunting continues to be a conservation issue on the Bateke Plateau in terms of poaching and wildlife depletion. Despite the decline in customary hunting practices, the remaining active traditions are useful for engaging with local people on customary hunting territories and wildlife protection and for understanding wildlife abundance through a cultural lens. Additionally, although the land-chief system did not have a management objective according to current definitions, conservation and management officials can benefit from understanding how fire setting and hunting were practiced.

All of the ceremonies described in this study are still practiced in some form and still influence Teke beliefs about wildlife abundance and scarcity, including animal density and plantation raiding. Additionally, many hunters remain faithful to the ceremonies of their domains and tend to continue hunting in these areas (Walters, et al., 2011). Customary ownership of hunting domains largely remains, despite statutory law indicating otherwise.

Although much of this hunting is done by urban hunters to supply urban markets, hunting by local people continues, and the people remain a target audience of local conservation NGOs. Many local people resist urban hunters' using their hunting grounds without permission, so historic hunting domains and customary claims persist and may be a way to engage with communities on protecting wildlife in their customary lands.

The Teke-Alima hunt primarily in savannas; however, the majority of hunting in Gabon is in the forest. Nevertheless, hunting laws are not well enforced in either ecosystem. In each case, management approaches need to be adapted to the particular context. At this time, Gabon's national parks are developing *Comité Communautaire de Gestion Locale* near every national park in an effort to include local people in buffer zone management (République Gabonaise, 2005). As these committees are formed and people are consulted, the cultural hunting practices and customary land claims will need to be reconsidered. Previous attempts by some NGOs have poorly mapped community hunting areas, including at the study site. More comprehensive cultural knowledge of the area and of the people is needed to achieve good results.

The application of Bateke fire-setting methods to the management of the PNPB can best be done by developing the fire plan foreseen by the ANPN for the park (ANPN, 2013). Currently, Bateke hunting domains are used for hunting right up to the park borders; if the PNPB fire plan intends to work in the buffer zone (5 km from the border), then collaboration with the Bateke who burn those savannas will be essential. Furthermore, it may be possible to apply these practices to burning in the park itself by integrating Bateke techniques, terminology, and expertise into the fire plan. This could include using the controlled ring fires employed

by women to collect grasshoppers (described in more detail in Walters, 2010a) to create the patch mosaic burning proposed by current fire management research (Parr & Brockett, 1999). Additionally, it may be possible to use the hierarchical model of the fire-chief system along with some of the related terminology. Many of the modern terms for fire management have their equivalents in Bateke including "burn unit" and "burn domain," all under the control of a "fire chief." Such a hierarchy is also found in South African, Togolese, and American fire management systems (Nadjombe, 1992; Biggs, 2005: 14; United States Department of Agriculture & United States Department of the Interior, 2008). Finally, teams of Bateke fire setters could be employed during target seasons to help execute the fire plan. During the course of this study, many local people indicated their wish that the park consider burning as a management option, believing that the park was opposed to burning. Furthermore, some hoped that they might be consulted to help with the burning, as they considered themselves to be knowledgeable about the subject.

When working with local hunters, understanding this cultural context is paramount to successfully communicating with community members (particularly elderly and middle-aged hunters) about wildlife abundance and hunting issues, to understanding the nuances of local hunting issues and how past practice continues to inform present-day hunting and ecosystem beliefs, and to teasing out issues of commercial versus subsistence hunting and how local people may wish to be included in conserving wildlife in their hunting territories. This study may help conservation organizations to understand the motivation for hunting *ntsa*, how hunting grounds were and are divided into domains, important concepts for community wildlife management projects, and the sort of belief systems that may still be active, particularly with regard to how illegal hunting and crop raiding are perceived as consequences of neglecting sacred places.

Notably, most hunting issues in Gabon are related to forest environments, and this is where many studies on hunting practices have been conducted. This study provides information on hunting in savanna environments and is useful not only for the PNPB but also for the adjacent Republic of Congo savanna areas, where the Bateke also conducted similar fire-setting practices. However, the results of this study should not be applied to other savanna areas without first understanding current and past fire-setting practices in those areas. For example, the hierarchical nature of resource use and fire setting is absent in other savanna areas of Gabon, despite the fact that fire setting was widely practiced in other forms (Walters, 2010b).

Future projects on community wildlife management, participatory mapping of natural resource use, and environmental education programs will be strengthened if these cultural factors are considered. To master them, conservation staff members need to spend considerable time in the villages, discovering these or similar practices, and building confidence between the village and the organization. All projects working with hunters need to first understand the historical, cultural, and territorial foundations of the practice and any influences on present day hunting territory, off-take, and belief. Understanding these elements in their local and wider

contexts of the bushmeat crisis will help conservation projects to be successful, to establish a rapport with the hunters whom they are trying to influence, and to build partnerships to protect the wildlife that all parties value, if for different reasons.

ACKNOWLEDGEMENTS This article is dedicated to Liz Pearson, who died on 17 May 2014, and who committed her life to conservation work in the Platuaux Bateke and was supportive of this study. Permission to conduct this research was granted by the Centre National de la Recherche Scientifique et Technologique conducted in collaboration with the Institut de Pharmacopée et de Médecine Traditionnelle. We thank the people of the Djouya and Mpassa River Valleys for their participation. The field assistance of J. Kewemie and M. Nkabi is gratefully acknowledged. This research was conducted during thesis work funded by the University College of London's Graduate School Research Scholarship and by an Overseas Research Scholarship Award scheme. Fieldwork was supported by the Parkes Foundation and the Rufford Foundation. Some field support was given by the Projet-Protection des Gorilles and the Wildlife Conservation Society-Gabon. P. Burnham, K. Homewood, J. Fairhead, P. Laris, M. Starkey, O. Hymas, and two anonymous reviewers provided comments on earlier versions of the manuscript that improved the manuscript. Discussions with J.M. Ebouli on Bateke history were also helpful. I thank the following libraries and archives for access: *Musée National d'Histoire Naturelle* (*Phanérogamie and the Bibliotheque Centrale*), Paris; the *Institute National de Cartographie*, Paris; the School of Oriental and African Studies, London; the Royal Anthropological Society Library, London; the Centre des Archives d'Outre Mer, Aix-en-Provence; the British Library, London; the *Centre Culturel Française de Saint Exupéry*, Libreville; Omar Bongo University's Department of Anthropology, Libreville; and the Prefecture Archives, Lékoni.

NOTES

(1) Also often referred to as the *Makoko*.

(2) Dupré and Féau give an analysis of the evolving fashion of the *oulwa*. When the Congo River became a stronger center of trade, and the influx of wealth destabilized the traditional economy, the *nouveau riche* were able to buy *oulwa*. For example, de Brazza noted in 1880 that he had seen a torc worn by Ngascumo, someone who was not a supreme land chief. This led Dupré and Féau to conclude that the *oulwa* had become modernized and no longer only signified a supreme land chief's position. As the supreme land chiefs were buried with their *oulwa* and a new one was made for the successor, the new ones were made in the metal that was in vogue during the period. De Brazza greatly admired these *oulwa* and commissioned one for himself, which contained 17 points, most likely signifying the 17 domains around Ncuna, the area where he negotiated on behalf of the French to establish Brazzaville (Dupré & Féau, 1998).

(3) When Cabrol's picture of a land chief was presented to a guardian of Akimi hunting domain, Etienne Nturi, a picture containing a mixture of symbols from cowry shells to red cloth to fly whisk, raphia, and crocodile teeth torcs, his answer was that the person pictured had been initiated into many cults and was not necessarily a land chief.

(4) I have been told several times that *Ambwongo* was conducted to bless my work just prior to my moving to Ekouyi-Mbouma.

(5) This means the "hot cooking pot."
(6) This fetish is called *Fvouhou*.
(7) The sacrificing of a chicken is called *ndogho* and is used to resolve family issues.
(8) The *ebaningi* were messengers of the land chief.
(9) Other informants from Ekouyi have cited *lampunea* (*Clappertonia polyandra*) or *languri* (*Triumfetta cordifolia*) for making cord for nets.
(10) Le Bomin (2004) presents Pierre Sallée's recording of the *olobo* song from the Bateke Plateau in the 1960s.
(11) The only exception to this was the re-creation of a fire drive in 2004 by an urban relative of the village.
(12) One *ewa* I measured had a circumference of 12.8 km. This perimeter would have been divided into thirds: one for the net and two for the *otiugui*. If there were four total *otiugui* (two per side), each would have run approximately 2.1 km.
(13) This difference of opinion may have been due to different hunting practices exercised on Kanini's upper Mpassa River and in Alna's lower Mpassa River catchments.
(14) According to Carpeneto et al. (Carpeneto et al., 2007), today's net hunting in the forest accounts for approximately 10% of all hunting techniques.
(15) For example, menstruating women's crossing the village and the consumption of *Aframomum alboviolaceum* fruits or the preparation of manioc leaves within the village borders

REFERENCES

Agence National des Parcs Nationaux (ANPN) 2013. *Programme Technique Conservation-Recherche 2014–2018 pour PN Plateaux Batéké*. Agence National des Parcs Nationaux, Libreville.

Allebone-Webb, S.M., N. Kümpel, J. Rist, G. Cowlishaw, J.M. Rowcliffe & E.J. Milner-Gulland 2012. Use of market data to assess bushmeat hunting sustainability in Equatorial Guinea. *Conservation Biology*, 25: 597–606.

Almquist, A. 2001. Horticulture and hunting in the Congo Basin: A case study from Central Africa (DR Congo). In (W. Weber, J.T.W. Lee, A. Vedder, L. Naughton-Treves, eds.) *African Rain Forest Ecology and Conservation*, pp. 334–343. Yale University Press, New Haven.

Ampolo, A. 2007. *Utilisation de la Viande de Brousse autour du futur Parc National Ogooué-Leketi : Cas de l'axe Simonbondo, District de Bambama, Département de la Lékoumou, République du Congo (Rapport semestriel)*. Wildlife Conservation Society, Lekana.

Augias 1928. Chasse au harpon a l'Hippopotame dans la Likoula-aux-Herbes (Moyen-Congo). *Bulletin des Recherches Congolaises*, 9: 97–98.

Badier 1929. Monographie de la Tribu des Batéké. *Bulletin des Recherches Congolaises*, 10: 37–43.

Bahuchet, S. 1985. *Les pygmées Aka et la forêt Centrafricaine*. SELAF, Paris.

Battell, A. 1901. The strange adventures of Andrew Battell of Leigh in Essex, sent by the Portugals to Angola, who lived there, and in the adjoining regions, near eighteen years [1610]. In (E.G. Ravenstein, ed.) *The Strange Adventures of Andrew Battell of Leigh, in Angola and the Adjoining Regions*. Reprinted from "Purhas his Pilgrimes". With Notes and a Concise History of Kongo and Angola, 1901. Printed for the Hakluyt Society. Bedford Press, London .

Bennett, E.L. & J.G. Robinson 2000. Hunting for the snark. In (J.G. Robinson & E.L. Bennett, eds.), *Hunting for Sustainability in Tropical Forests*, pp. 1–9. Columbia University Press, New York.

Biebuyck, D. 1963. Systèmes des tenure foncière et problèmes fonciers au Congo. In (D. Biebuyck, ed.) *African Agrarian Systems*, pp. 83–100. Oxford University Press for the International Africa Institute, London.

Biggs, H.C. 2005. *Proposed Policy for the Ecosystem Management of Fire in the Kruger National Park*. South African National Parks, Pretoria.

Bonnafé, P. 1978. *Nzo lipfu, le lignage de la mort: la sorcellerie, idéologie de la lutte sociale sur le plateau Koukouya*. Recherches Oubanguiennes, Nanterre.

——— 1987. *Histoire sociale d'un peuple congolais: Livre 1. La terre et le ciel*. ORSTOM, Paris.

——— 1988. *Histoire sociale d'un peuple congolais Livre II : posseder et gouverner*. ORSTOM, Paris.

Bout, N. 2006. *Suivi écologique des grands mammifères et de l'impact humain : Rapport final*. Wildlife Conservation Society-Gabon. Projet Plateaux Batéké.

Brunschwig, H. 1972. *Brazza explorateur: les traités Makoko (1880–1882)*. Mouton & Co, Paris.

Cabrol, C. n.d. *La civilisation des peuples Batéké*. Multipress and Paul Bory S.A, Libreville.

Carpeneto, G.M., A .Fusari & H. Okongo 2007. Subsistence hunting and exploitation of mammals in the Haut-Ogooué province, south-eastern Gabon. *Journal of Anthropological Sciences*, 85: 183–193.

Cinnamon, J. 2010. Counting and recounting: dislocation, colonial demography and historical memory in northern Gabon. In (K. Ittman, D.D. Cordell & G. Maddox, eds.) *The Demographics of Empire: The Colonial Order and the Creation of Knowledge*, pp. 130–156. Ohio University Press, Athens.

Coad, L., K. Abernethy, A. Balmford, A. Manica, L. Airey & E.J. Milner-Gulland 2010. Distribution and use of income from bushmeat in a rural village, central Gabon. *Conservation Biology*, 24: 1510–1518.

Coad, L., J. Schleicher, E.J. Milner-Gulland, T.R. Marthews, M. Starkey, A. Manica, A. Balmford, W. Mbombe, T.R. Diop Bineni & K. Abernethy 2013. Social and ecological change over a decade in a village hunting system, Central Gabon. *Conservation Biology*, 27: 270–280.

COMIFAC (Commission des Forêts d'Afrique Centrale) 2005. *Plan de convergence : pour la conservation et la gestion durable des ecosystems forestiers d'Afrique Centrale*. Cameroon, Yaounde.

Dapper, O. 1989. *Naukeurige Beschrijvinghe der Akriaensche Gewesten, Amsterdam 1668*. Reprinted in Objets interdits, pp. 85–374. Fondation Dapper, Paris.

de Brazza, P.S. 1887. Voyages dans l'Ouest Africain par Monsieur Savorgnan de Brazza 1875–1887. Textes et dessins inédit. *Tour du Monde*, 289–336.

——— 1888. Voyages dans l'Ouest Africain par Monsieur Savorgnan de Brazza. 1875–1887. Textes et dessins inédit. II. *Tour du Monde*, 1–64.

de Chavannes, C. 1886. Mission de Brazza au Congo: éxposé sommaire de voyage de l'Ouest-Africain. *Société de Géographie de Lyon*, 21 février: 5–39.

de Merode, E., K. Homewood & G. Cowlishaw 2004. The value of bushmeat and other wild foods to rural households living in extreme poverty in Democratic Republic of Congo. *Biological Conservation*, 118: 573–581.

Demesse, L. 1978. *Changements techno-économiques et sociaux chez les pygmées Babinga (Nord Congo et Sud Centrafrique)*. Société d'études linguistiques et anthropologiques de France. SELAF, Paris.

Deschamps, H. 1962. *Traditions orales et archives au Gabon*. Berger-Levrault, Paris.

Dheur, M. 1938. Chasse Gabonaise. *Bulletin de la Société de Recherches Congolaises*, 25: 79–96.

——— 1939. Chasse Gabonaise Conseils à Félix. *Bulletin des Recherches Congolaises*, 27: 116–135.

Dupré M.-C. & B. Pinçon.1997. *Métallurgie et politique en Afrique Centrale: deux milles ans de vestiges sur les Plateaux Batéké Gabon, Congo, Zaire*. Editions Kathala, Paris.

Dupré, M.-C. & E. Féau 1998. *Batéké peinture et sculpteurs d'Afrique Centrale*. Réunion des Musées Nationaux, Paris.

Dusseljé, E. 1910. *Les Tégués de l'Alima, Congo Français*. C. de Cauwer, Anvers.

Dybowski, J. 1893. *La route du Tchad. Du Loango au Chari*. Firmin-Didot, Paris.

East, T., N. Kümpel, E.J. Milner-Gulland & J.M. Rowcliffe 2005. Determinants of urban bushmeat consumption in Rio Muni, Equatorial Guinea. *Biological Conservation*, 126: 206–215.

Ebouli, J.M. 2001. *Les structures de type féodal en Afrique Centrale le cas des Téké : étude des relations de dépendance personnelle et des rapports de production entre "A mfumu" et "Elogo dja Mfumu" (des origines à 1880)*. Université Omar Bongo, Libreville.

Edderai, D. & M. Dame 2006. A census of the commercial bushmeat market in Yaoundé, Cameroon. *Oryx*, 40: 472–475.

Eves, H.E. & R.G. Ruggiero 2000. Socioeconomics and the sustainability of hunting in the forest of northern Congo (Brazzaville). In (J.G. Robinson & E.L. Bennett, eds.) *Hunting for Sustainability in Tropical Forests*, pp. 427–454. Columbia University Press, New York.

Fa, J.E. 2000. Hunted animals in Bioko island, West Africa: sustainability and future, In (J.G. Robinson & E.L. Bennett, eds.) *Hunting for Sustainability in Tropical Forests*, pp. 168–198. Columbia University Press, New York.

FAO (Food and Agriculture Organization) 2011. *Sustainable Management of the Wildlife and Bushmeat Sector in Central Africa*. FAO, Rome.

Fimbel, C., B.K. Curran & L. Usongo 2000. Enhancing the sustainability of duiker hunting through community participation and controlled access in the Lobeke region of southeastern Cameroon. In (J.G. Robinson & E.L. Bennett, eds.) *Hunting for Sutainability in Tropical Forests*, pp. 356–374. Columbia University Press, New York.

Gami, N. 2003. *Mission d'information et d'étude socio-économique dans les villages de la sous-préfecture de Lékana (Congo Brazzaville), frontalière du Parc National des Plateaux Batéké (Gabon)*. Rapport pour le Projet Protection des Gorilles (Gabon), Gabon

Guiral, L. 1889. *Le Congo Français. Du Gabon à Brazzaville*. Plon, Paris.

Hart, J.A. 2000. Impact and sustainability of indigenous hunting in the Ituri forest, Congo-Zaire: a comparison of unhunted and hunted duiker populations. In (J.G. Robinson & E.L. Bennett, eds.) *Hunting for Sustainability in Tropical Forests*, pp. 106–153. Columbia University Press, New York.

Ichikawa, M. 1983. An examination of the hunting-dependent life of the Mbuti pygmies, eastern Zaire. *African Study Monographs*, 4: 55–76.

Ikamba, M. 2005. *Conserving and Promoting the PBNP Fauna and Flora for the Mutual and Sustainable Profit of Present Communities and Future Generations*. Project Plan. Wildlife Conservation Society-Projet Plateaux Batéké, Franceville.

——— 2006. *Les aventures du petit ntsa*. Wildlife Conservation Society, Franceville.

Institut Géographique National 1954. *AEF 38 SA 33XV 501–509 & 49 SA 33 IX 127–129; 220–222; 256–258; 290–292*. Sainte-Mandé, France.

Kinata, C. 2001. *Les ethnochefferies dans le Bas-Congo français : collaboration et résistance 1896–1960*. L'Harmattan, Paris.

Koch, H. 1968. *Magie et chasse dans la forêt camerounaise*. Berger-Levrault, Paris.

Komarek, E.V. 1972. Lightning and fire ecology in Africa. In (E.V. Komarek, ed.) *Fire in Africa*, pp. 473–511. Tall Timbers Research Stations, Tallahassee, Florida.

Kümpel, N., E.J. Milner-Gulland, G. Cowlishaw & J.M. Rowcliffe 2010a. Assessing sustain-

ability at multiple scales in a rotational bushmeant hunting system. *Conservation Biology*, 24: 861–871.

——— 2010b. Incentives for hunting: the role of bushmean in the household economy in rural Equatorial Guinea. *Human Ecology*, 38: 251–264.

Kümpel, N., E.J. Milner-Gulland, J.M. Rowcliffe & G. Cowlishaw 2008. Impact of gun-hunting on diurnal primates in continential Equatorial Guinea. *International Journal of Primatology*, 29: 1065–1082.

Kümpel, N., J.M. Rowcliffe, G. Cowlishaw & E.J. Milner-Gulland 2009. Trapper profiles and strategies: insights into sustainability from hunter behaviour. *Animal Conservation*, 12: 531–539.

Lahm, S.A. 2001. Hunting and wildlife in northeastern Gabon. In (W. Weber, J.T.W. Lee, A. Vedder, L. Naughton-Treves, eds.) *African Rain Forest Ecology and Conservation*, pp. 344–354. Yale University Press, New Haven.

Le Bomin, S. 2004. *Musiques Batéké Mpa Atégé*. Editions Sepia, Saint-Maur-des-Fosses.

Lee, R.B. & R.H. Daly 2004. *The Cambridge Encyclopedia of Hunters and Gatherers*. Cambridge University Press, Cambridge.

Lewis, J. 2002. *Forest Hunter-Gatherers and their World: A Study of the Mbendjele Yaka Pygmies of Congo-Brazzaville and their Secular and Religious Activities and Representations*. London School of Economics and Political Science, London.

Marks, S.A. 1977. Hunting behavior and strategies of the Valley Bisa in Zambia. *Human Ecology*, 5: 1–36.

——— 1979. Profile and Process: Subsistence hunters in a zambian community. *Africa*, 49: 53–67.

——— 1984. *The Imperial Lion: Human Dimensions of Wildlife Management in Central Africa*. Westview Press, Boulder.

Nadjombe, O. 1992. La déforestation par l'agriculture itinérante et les feux de brousse. *World Bank Environment Paper*, 1: 110–116.

Nse Esseng, C.S. 2009. *Cartographie participative des zones communautaires riveraines au Parc National des Plateaux Bateke : phase preliminaire paysage Leconi-Bateke-Lefini*. Wildlife Conservation Society-Bateke Plateaux Project, Franceville.

Okoundzi, J. 2004. *Perception de l'évolution de "la ressource gibier" par les villageois du Canton Djouya*. Report to the Wildlife Conservation Society-Bateke Plateaux Project, Franceville.

Papy, L. 1949. Les Populations Batéké (A.E.F.). *Cahiers d'Outre-Mer*, 2: 112–134.

Parr, C. & Brockett, B.H. 1999. Patch-mosaic burning: a new paradigm for savanna fire management in protected areas? *Koedoe*, 42: 117–130.

Pobeguin, H. 1888. *Carte des itinéraires relevés par Mr. H. Pobeguin entre l'Alima et l'Ogooué des Batékes-Congo Français*. Centre des Archives d'Outre-Mer, Aix-en-Provence, France.

Ramecourt, G.D. 1930. Chasse au Rhinocéros et aux lion dans le Mayo-Kebbi. *Bulletin des Recherches Congolaises*, 11: 117–130.

République Gabonaise 1994. *Décret no. 687/PR/MEFE du 28 juillet 1994 rélatif à la protection de la faune*. Gabon.

——— 2001. *LOI N0016/01 Portant Code Forestier en République Gabonaise*. Gabon.

——— 2005. *Loi relative aux parcs nationaux*. Gabon.

Rich, J. 2010. 'Tata otangani, oga njali, mbiambiè!': Hunting and colonialism in southern Gabon, ca. 1890–1940. *Journal of Colonialism and Colonial History*, 10(3). Online. http://muse.jhu.edu/journals/journal_of_colonialism_and_colonial_history/summary/v010/10.3.rich.html (Accessed January 15, 2014)

Roulon-Doko, P. 1998. *Chasse, cueillette et culture chez les Gbaya de Centrafrique*. Editions l'Harmattan, Paris.

Russell, D., P. Mbile & N. Tchamou 2011. Farm and forest in Central Africa: toward an integrated rural development strategy. *Journal of Sustainable Forestry*, 30: 111–132.

Sautter, G. 1960. Le plateau congolais de Mbé. *Cahiers d'Etudes Africaines*, II: 5–48.

——— 1966. *De l'Atlantique au fleuve Congo, une géographie du sous-peuplement. République du Congo, République du Gabon*. Éditions du Centre National de la Recherche Scientifique, Paris.

Schenk, M., E.N. Effa, M. Starkey, D.S. Wilkie, K. Abernethy, P. Telfer, R. Godoy & A. Treves 2006. Why people eat bushmeat: results from two-choice, taste tests in Gabon, Central Africa. *Human Ecology*, 34: 433–445.

Schwartz, D. 1988. *Histoire d'un paysage : le lousseke. Paléoenvironnements quaternaires et podzolisation sur sables Batéké (quarante derniers millénaires, région de Brazzaville, R.P. du Congo)*. ORSTOM, Paris.

Sims, A. 1888. *A Vocabulary of the Kiteke, as Spoken by the Bateke (Batio) and Kindred Tribes on the Upper Congo*. Kiteke-English. Hodder and Stoughton, London.

Soret, M. 1973. *Les Téké de l'est. Essai sur l'adaptation d'une population à son milieu*. Université de Lille.

Trefon, T. 2003. Libreville's evolving forest dependencies. In (M.C. Reed & J.F. Barnes, eds.) *Culture, Ecology, and Politics in Gabon's Rainforests*, pp. 37–62. Edwin Mellon Press, Lewiston.

Turner, V. 1967. *Forest of Symbols*, pp. 280–298. Cornell University Press, Ithaca.

United States Department of Agriculture & United States Department of the Interior 2008. *Interagency Prescribed Fire Planning and Implementation Procedures Guide*. United States Government, Washington, DC.

van Vleit, N., E.J. Milner-Gulland, F. Bousquet, M. Saqalli & R. Nasi 2010. Effect of small-scale heterogeneity of prey and hunter distributions on the sustainability of bushmeat hunting. *Conservation Biology*, 24: 1327–1337.

Vansina, J. 1966. *Kingdoms of the Savanna: A History of Central African States until European Occupation*. University of Wisconsin Press, Madison.

——— 1973. *The Tio Kingdom of the Middle Congo 1880–1892*. Oxford University Press, London.

——— 1990. *Paths in the Rainforest: Toward a History of Political Tradition in Equatorial Africa*. James Currey, London.

Vassal, G.M. 1923. Une Chasse au Bœuf Sauvage en Afrique Equatoriale. *Le Monde Coloniale et Illustre*, 3: 57.

Walters, G. 2010a. *The Land Chief's Embers: Ethnobotany of Bateke fire Regimes, Savanna Vegetation and Resource Use in Gabon*. University College of London.

——— 2010b. *Proposition de plan de gestion du feu pour le Parc National de Loango (Gabon)*. University College London, Santa Clara, Gabon.

——— 2012. Changing customary fire regimes and vegetation structure in Gabon's Bateke Plateaux. *Human Ecology*, 40: 943–955.

Walters, G., L. Coad, J. Schleicher, O. Hymas & P. Kialo 2011. *Understanding Evolving Resource Governance in Gabon: Lessons for Community-Based Conservation*. Paper presented at the 25th Conference of the Society for Conservation Biology, 6–9 December, 2011. Auckland New Zealand.

Waylen, K.A., A. Fischer, P.J.K. McGowan, S.J. Thirgood & E.J. Milner-Gulland 2010. Effect of local cultural context on the success of community-based conservation interventions. *Conservation Biology*, 24: 1119–1129.

Weite, P. 1954. *Dans le Jungle du Gabon*. Toison d'Or, Paris.

White, L. J.T. & J.P. vande Weghe 2008. *Patrimoine mondial naturel d'Afrique Centrale : rapport de l'atelir de Brazzaville 12–14 Mars 2008*. Initiative pour le Patrimoine Mondiale

Forestier d'Afrique Centrale (CAWHFI).
Wicander, S. 2012. *Learning Lesons for Bushmeat Management in West and Central Africa: How and When Can Alternative Livelihood Projects be Most Effective in Improving Sustainability of Bushmeat Hunting?* University of Oxford, Oxford.
Wilkie, D.S. & J.F. Carpenter 1999. Bushmeat hunting in the Congo Basin: an assessment of impacts and options for mitigation. *Biodiversity and Conservation*, 8: 927–955.
Wilkie, D.S. & B.K. Curran 1991. Why do Mbuti hunters use nets? Ungulate hunting efficiency of archers and net-hunters in the Ituri rain forest. *American Anthropologist*, 93: 680–689.
Wilkie, D.S., M. Starkey, K. Abernethy, E.N. Effa, P. Telfer & R. Godoy 2005. Role of prices and wealth in consumer demand for bushmeat in Gabon, Central Africa. *Conservation Biology*, 19: 268–274.
Wilkie, D.S., M. Starkey, E.L. Bennett, K. Abernethy, R. Fotso, F. Maisels & P. Elkan 2006. Can taxation contribute to sustainable management of the bushmeat trade?: evidence from Gabon and Cameroon. *Journal of International Wildlife Law & Policy*, 9: 335–349.

——— Accepted *December 20, 2013*

Corresponding Author's Name and Address: G. WALTERS, *International Union for the Conservation of Nature, Forest Program, West and Central Africa Program, B.P. 5506, Yaoundé, CAMEROON.*
E-mail: g.walters [at] ucl.ac.uk